REMARKS/ARGUMENTS

Applicants submit this Amendment and Response to respond to the Office Action dated July 13, 2005. Claims 1, 2, 6, 7, 9-13, 15, and 16 have been amended and Claims 5 and 8 have been canceled without intending to abandon or to dedicate to the public any patentable subject matter. Accordingly, Claims 1-4, 6, 7, and 9-20 are now pending. As set out more fully below, reconsideration and withdrawal of the rejections of the claims are respectfully requested.

Claims 10-20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,735,636 to Mokryn, et al. ("Mokryn"). In order for a rejection under 35 U.S.C. § 102 to be proper, each and every element as set forth in a claim must be found, either expressly or inherently described, in a single prior art reference. (MPEP § 2131.) However, all of the limitations set forth in the pending claims cannot be found in the Mokryn reference. Accordingly, reconsideration and withdrawal of the rejections of the claims are respectfully requested.

Claims 1-9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mokryn in view of U.S. Patent No. 6,574,709 to Skazinski, et al. ("Skazinski"). In order for a rejection under 35 U.S.C. § 103 to be proper there must be some suggestion or motivation to modify the reference, or to combine the reference teachings, there must be a reasonable expectation of success, and the prior art reference or references must teach or suggest all of the claim limitations. (MPEP § 2143). However, all of the limitations as set forth in the pending claims are not taught, suggested, or described in either of the above-mentioned references. Accordingly, reconsideration and withdrawal of the rejections of the claims are respectfully requested.

Claim 1 is generally directed to a method of mirroring data using two controllers and a storage system. As amended, Claim 1 recites in part, "providing a first message comprising a write mirror message that includes metadata by a first controller to a second controller and in which said first message including said metadata is not greater than 128 bits, with said first message being part of a first mirroring operation." Claim 1 further recites, "continuing with said first mirroring operation after said providing a first message by providing a second message comprising a data mirror message that includes user data, wherein no messages other than said first and second messages are provided by said first controller to said second controller as part of said first mirroring

operation." Support for the amendments to Claim 1 can be found in the specification, for example Page 15, lines 6-12 and in Fig. 5. As discussed below, there is no teaching, suggestion or disclosure in Mokryn or Skazinski of sending only aa first message comprising a write mirror message that includes metadata and a second message. Furthermore, Mokryn teaches only metadata transfers between a host or hosts and an intelligent splitter. Mokryn does not teach transferring metadata from a first controller to a second controller where a write mirror message is used and then only a second message includes a data mirror message including user data.. Therefore, for at least these reasons, Claim 1 and Dependent Claims 2-4, 6, 7, and 9 are not obvious over Mokryn in view of Skazinski, and the rejections of Claim 1 and dependent Claims 2-4, 6, 7, and 9 should be reconsidered and withdrawn.

Claim 10 is generally directed to a method for mirroring data using two controllers in a storage system. As amended, Claim 10 recites in part, "making a determination related to contents of a first message with a first controller, wherein said message is to be sent by said first controller to a second controller as part of a first mirroring operation." Claim 10 then further recites, "producing said first message having contents that depends on said making step wherein, when said making step determines that data to be sent is less than or equal to a predetermined number of bits, said first message includes metadata and when said making step determines that said data is greater than said predetermined number of bits, at least less than all of said metadata associated with said first mirroring operation is not included with said first message." Support for the amendments to Claim 10 can be found in the specification, for example, at page 15, lines 2-5 and in Figs. 4 and 5. Again, Mokryn fails to describe each and every element of the Amended Claims. Specifically, Mokryn does not disclose making a determination related to contents of a message with a first controller. Rather, Mokryn uses a host to determine the contents of a message. Mokryn teaches the utility of an intelligent splitter, which routes or repackages data under host control, not between controllers. Also, Mokryn does not teach having data being sent that can be less than or equal to a predetermined number of bits, or how many messages need to be sent between controllers to complete a mirroring operation. The mirroring of the data in the present invention between controllers is independent of a host unlike the Mokryn reference. Therefore, for at least these

reasons, Claim 10 and Dependent Claims 11-14 are not anticipated by Mokryn, and the rejections of Claim 10 and Dependent Claims 11-14 should be reconsidered and withdrawn.

Claim 15 is generally directed to a method of mirroring data using two controllers in a storage system. As amended, Claim 15 recites, "a first controller that generates one of a first message and a second message depending on an amount of data to be sent by said first controller as part of a first mirroring operation, wherein said first message is sent in response to determining that said amount of data to be sent by said first controller is less than or equal to a predetermined number of bytes." Again, Mokryn does not disclose a system where the a first controller generates a message depending on the amount of data to be sent by the first controller and then sends that message directly to a second controller. Furthermore, neither Mokryn nor Skazinski teach sending a first message in response to determining that data in the message is going to be less than or equal to a predetermined number of bytes. Skazinski only teaches maintaining mirror maps of preferably 128 bits. There is no determination in Skazinski of whether or not a message is to be sent based on the amount of data included in the message. Therefore, for at least these reasons, Claim 15 and dependent Claims 16-20 are not anticipated by Mokryn, and the rejections of Claim 15 and dependent Claims 16-20 should be reconsidered and withdrawn.

Mokryn discusses an "intelligent splitter", which reroutes or repackages data under host control. The use of a host in Mokryn is to control the "intelligent splitter". Thereafter, the "intelligent splitter" decides how data is to be transferred among controllers. Mokryn teaches that a mirroring operation first consists of a message sent from a host to an "intelligent splitter", then from the "intelligent splitter" to a first controller, then from the "intelligent splitter" to a second controller. It is essential in the context of Mokryn to have an "intelligent splitter" and host transferring information between a first controller and a second controller. In addition, Mokryn does not describe mirroring data in which a mirror operation requires only two messages from the first controller to the second controller. Furthermore, none of the devices makes a determination of the number of bits that needs to be sent in a message. Accordingly, for at least these reasons, the rejections of the claims as either anticipated by or obvious over Mokryn should be reconsidered and withdrawn.

Skazinski is generally directed to data mirroring in a data storage system. Skazinski describes a mirror map wherein 128 bits is preferably used, since the data block and cache line size are both fixed. There is no determination in Skazinski if message size needs to be less than 128 bits. Mokryn and Skazinski both fail to teach, suggest, or describe a data mirroring system where message size is determined and, then if message size is less than 128 bits, various actions are taken. Accordingly, for at least these reasons, the rejections of the Claims as obvious over Mokryn in view of Skazinski should be reconsidered and withdrawn.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: _____

Matthew R. Ellsworth
Registration No. 56,345
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: 10-13-05